

IN THE CLAIMS

1-40 (canceled)

41.(currently amended) A process comprising:

applying an aqueous, acidic solution comprising dissolved contents to a metallic surface, said metallic surface comprising at least 5% by weight of at least one of aluminum or an aluminum alloy, wherein the dissolved contents in the phosphating solution comprise:

having a combined sodium and potassium content in the range of 0.3 to 1.8 g/L as sodium, the potassium content being converted to sodium on a molar basis;

zinc in a concentration range of 0.2 to 4 g/L;

phosphate in a concentration range of 4 to 65 g/L, calculated as PO_4 ;

free fluoride in a concentration range of 0.03 to 0.5 g/L;

total fluoride in the concentration range of 0.1 to 5 g/L;

wherein a zinc-containing phosphate film is deposited on the metallic surfaces and has a coating weight in the range of 0.5 to 10 g/m², whereby the value of the free acid KCl is kept in the range of 1.6 to 2.8 points, wherein the process is conducted without a precipitation tank, whereby precipitation products from an Al-F complex are scarcely deposited on the surfaces of the sheets so that there is no significant deterioration of the corrosion resistance by the precipitation products.

42. (previously presented) The process according to claim 41, wherein the content of dissolved aluminum in the phosphating solution are in the concentration range of 0.002 to 1 g/L.

43. (previously presented)The process according to claim 41, wherein the phosphating solution comprises at least one of a silicon complex fluoride and a boron complex

fluoride, wherein the total content of the boron and the silicon complex fluoride in the phosphating solution is 0.01 to 8 g/L.

44. (previously presented) The process according to claim 41, wherein a content of complex bound fluoride in the phosphating solution is from 0.01 to 8 g/L, calculated on a molar basis as SiF_6 .

45. (previously presented)) The process according to claim 41, wherein the contents dissolved in the phosphating solution are as follows:

sodium: in the concentration range of 0.050 to 2 g/L,

potassium: virtually none or in the concentration range of 0.030 to 1.5 g/L,

sodium and potassium: in the concentration range of 0.025 to 1.5 g/L as sodium, potassium being converted to sodium on a molar basis,

silicon complex fluoride: in the concentration range of 0.01 to 4 g/L and/or

boron complex fluoride: in the concentration range of 0.01 to 4 g/L, calculated as SiF_6 and BF_4 respectively.

46. (previously presented) The process according to claim 41, wherein at least one of the contents in the phosphating solution are as follows:

sodium: virtually none or in the concentration range of 0.060 to 1.8 g/L;

potassium: in the concentration range of 0.035 to 1.4 g/L;

potassium: in the concentration range of 0.035 to 1.4 g/L;

sodium and potassium: in the concentration range of 0.05 to 2 g/L as sodium, potassium being converted to sodium on a molar basis;

silicon complex fluoride: in the concentration range of 0.02 to 1 g/L or

boron complex fluoride: in the concentration range of 0.02 to 3 g/L, calculated as SiF_6 and BF_4 respectively.

47. (previously presented)The process according to claim 41, wherein the dissolved contents comprise at least one of nickel: virtually none or in the range of 0.001 to 3 g/L or manganese: virtually none or in the range of 0.002 to 5 g/L.

48. (previously presented)The process according to claim 41, wherein the dissolved contents comprise at least one of

dissolved iron²⁺ ions: virtually none or in the concentration range of 0.005 to 3 g/L or

complexed iron³⁺ ions: virtually none or in the concentration range of 0.005 to 1 g/L.

49. (previously presented)The process according to claim 41, wherein the dissolved contents comprises at least one of:

silver: virtually none or in the concentration range of 0.001 to 0.080 g/L or

copper: virtually none or in the concentration range of 0.001 to 0.050 g/L.

50. (previously presented)The process according to claim 41, wherein the dissolved contents comprises at least one of:

titanium: virtually none or in the concentration range of 0.001 to 0.200 g/L or

zirconium: virtually none or in the concentration range of 0.001 to 0.200 g/L.

51. (previously presented)The process according to claim 41, wherein the dissolved contents comprise at least one of:

ammonium: virtually none or in the concentration range of 0.01 to 50 g/L or

nitrate: virtually none or in the concentration range of 0.01 to 30 g/L.

52. (previously presented)The process according to claim 41, wherein the dissolved contents comprise at least one of:

sulfate: virtually none or in the concentration range of 0.005 to 5 g/L or

chloride: virtually none or in the concentration range of 0.020 to 0.5 g/L.

53. (previously presented)The process according to claim 41, wherein the phosphating solution comprises at least one accelerator selected from the group consisting of a compounds or ions based on

nitrogen-containing compounds in the concentration range of 0.01 to 8 g/L;

chlorate in the concentration range of 0.01 to 6 g/L;

hydroxylamine in the concentration range of 0.01 to 3 g/L; and

peroxide, including water-soluble organic peroxide, in the concentration range of 0.001 to 0.200 g/L, calculated as H_2O_2 .

54. (previously presented)The process according to claim 41, wherein the content of magnesium in the phosphating solution is not more than 1 g/L.

55. (previously presented)The process according to claim 54, wherein the contents of the magnesium is not more than 0.15 g/L.

56. (previously presented)The process according to claim 41, wherein the pH is in the range of 2 to 4.

57. (previously presented)The process according to claim 41, wherein the content of free acid determined with KCl is in the range of 0.3 to 6 points, the content of dilute total acid is in the range of 8 to 70 points or the content of total acid according to Fischer is in the range of 4 to 50 points.

58. (previously presented)The process according to claim 41, wherein the phosphate coating is applied at a temperature of from 20 to 70°C.

59. (previously presented)The process of claim 41, wherein the surface is a body part for an automobile or an aircraft, a sheet, a wire mesh, or a small plant.

60. (currently amended) A process comprising:
applying an aqueous, acidic solution comprising dissolved contents to a metallic surface in the absence of a precipitated tank, said metallic surface comprising at least 5% by weight of at least one of aluminum or an aluminum alloy, wherein the dissolved contents in the phosphating solution comprise:

virtually no sodium or a concentration of sodium in the range of at least 0.04 g/L,
virtually no potassium or a concentration of potassium in the range of at least 0.025 g/L,
wherein the concentrations of sodium and potassium together is in the range of 0.3 to 1.8 g/L as sodium, the potassium content being converted to sodium on a molar basis;
zinc in a concentration range of 0.2 to 4 g/L;
phosphate in a concentration range of 4 to 65 g/L, calculated as PO_4 ;
free fluoride in a concentration range of 0.03 to 0.5 g/L;
total fluoride in the concentration range of 0.1 to 5 g/L; wherein a zinc-containing phosphate film is deposited on the metallic surfaces and has a coating weight in the range of 0.5 to 10 g/m^2 , wherein the range of free fluoride acid is from 0.1 to 0.25 points, whereby precipitation products from an Al-F complex are scarcely deposited on the surfaces of the sheets so that there is no significant deterioration of the corrosion resistance by the precipitation products.

61. (previously presented)The process according to claim 60, wherein a content of complex bound fluoride in the phosphating solution is from 0.01 to 8 g/L, calculated on a molar basis as SiF_6 .